REMARKS

By this preliminary amendment, applicant has cancelled claims 3-12 and 14, amended claims 1, 2, 13, 15, 17, 22 and 23, and added new claims 24-34. An early allowance and issuance of claims 1-2, 13 and 15-34 pending in the present application are respectfully requested. The Examiner is invited to contact the undersigned for any questions.

Respectfully Submitted;
FARJAMI & FARJAMI LLP

Farshad Farjami, Esq.
Reg. No. 41,014

Farshad Farjami, Esq.
FARJAMI & FARJAMI LLP
16148 Sand Canyon
Irvine, California 92618
Tel: (949) 784-4600
Fax: (949) 784-4601

CERTIFICATE OF MAILING

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Lori Lave
Name

Signature

Marked-Up Version of the Amended Claims

1. (Amended) A speech coding system for encoding a speech signal, the speech coding system comprising:

an encoder that ~~encodes~~ determines a plurality of candidate pulse positions ~~to encode~~ for encoding an excitation signal, wherein the plurality of candidate pulse positions are ~~defined by at least one track~~ divided among a plurality of tracks; and

~~a decoder coupled to the encoder; and~~

~~a circuit coupled with the encoder and the decoder, where the circuit includes an algorithm that dynamically allocates the at least one track.~~

an algorithm for execution by the encoder;

wherein the algorithm is configured to assign a first fixed set of candidate pulse positions selected from the plurality of candidate pulse positions to a first track of the plurality of tracks if the algorithm determines that the speech signal is approximately periodic or to assign a second fixed set of candidate pulse positions selected from the plurality of candidate pulse positions to a second track of the plurality of tracks if the algorithm determines that the speech signal is approximately non-periodic;

wherein the algorithm is further configured to assign a dynamic set of candidate pulse positions selected from the plurality of candidate pulse positions to an additional track of the plurality of tracks, wherein the candidate pulse positions in the dynamic set of candidate pulse positions are defined relative to the candidate pulse positions in the assigned fixed set of candidate pulse positions.

2. (Amended) The system according to claim 1, wherein the encoder includes a fixed codebook having a first sub-codebook for coding the periodic speech signal and a second sub-

codebook for coding the non-periodic speech signal ~~where the algorithm allocates the candidate pulse positions for the at least one track according to available information~~.

13. (Amended) A speech coding system comprising:

a codec that includes an encoder and a decoder, the encoder ~~encodes~~ determines candidate pulse positions to encode an excitation signal, where the candidate pulse positions are divided into ~~at least one~~ a plurality of tracks; and

~~a circuit coupled with the codec, where the circuit includes an algorithm to dynamically allocate candidate pulse positions according to available information.~~

an algorithm for execution by the encoder, the algorithm configured to select a first track of the plurality of tracks if the speech signal is approximately periodic and select a second track of the plurality of tracks if the speech signal is approximately non-periodic.

15. (Amended) The system according to claim 14 where the algorithm determines a first fixed codebook if the speech signal type is approximately periodic and determines a second fixed codebook if the speech signal is non-periodic.

17. (Amended) A method for dynamically coding a position of a pulsed signal in a speech coding system, comprising:

determining a position of a first pulse on a first track of a plurality of tracks; and

dynamically defining a second pulse position ~~for~~ on a second track of the plurality of tracks based on the position of the first pulse on the first track.~~; and~~

~~determining a position of a second pulse on the second track according to the defined at least one candidate pulse position for the second track.~~

22. (Amended) The method according to claim 21 ~~where the circuit~~ further ~~includes an~~ including measuring energy ~~measure algorithm~~ to derive the main peaks.

23. (Amended) The method according to claim 22 where the energy ~~measure algorithm~~ defines the main peaks at the positions of the pitch prediction contribution including the highest energies.

24. (New) A speech coding system for encoding a speech signal, the speech coding system comprising:

an encoder that determines a plurality of candidate pulse positions for encoding an excitation signal, wherein the plurality of candidate pulse positions are divided among a plurality of tracks; and

an algorithm for execution by the encoder;

wherein the algorithm is configured to determine a first pulse position from the plurality of candidate pulse positions on a first track of the plurality of tracks if the speech signal is approximately periodic or to determine a second pulse position from the plurality of candidate pulse positions on a second track of the plurality of tracks if the speech signal is approximately non-periodic, and wherein the algorithm is further configured to define a third pulse position from the plurality of candidate pulse positions on an additional track of the plurality of tracks based on the first pulse position if the speech signal is approximately periodic or the second pulse position if the speech signal is approximately non-periodic.

25. (New) The system according to claim 24 where the algorithm uses a pitch prediction contribution to derive a reference position of a main peak from a previously encoded speech signal to define the first pulse position based on the reference position.

26. (New) The system according to claim 25 where the algorithm defines the first or the second pulse position based on the reference position.

27. (New) The system according to claim 26 where the algorithm further includes an energy measure algorithm to derive one or more additional main peaks.

28. (New) The system according to claim 27 where the energy measure algorithm defines the main peak at the position of the pitch prediction contribution including the highest energy.

29. (New) A speech coding system for encoding a speech signal, the speech coding system comprising:

an encoder that determines a plurality of candidate pulse positions for encoding an excitation signal, wherein the plurality of candidate pulse positions are divided among a plurality of tracks; and

an algorithm for execution by the encoder;

wherein the algorithm is configured to determine a first pulse position from the plurality of candidate pulse positions on a first track of the plurality of tracks, and wherein the algorithm is further configured to define a second pulse position from the plurality of candidate pulse positions on a second track of the plurality of tracks based on the first pulse position.

30. (New) The system according to claim 29 where the algorithm uses a pitch prediction contribution to derive a reference position of a main peak from a previously encoded speech signal to define the first pulse position based on the reference position.

31. (New) The system according to claim 20 where the algorithm defines the first pulse position based on the reference position.

32. (New) The system according to claim 31 where the algorithm further includes an energy measure algorithm to derive one or more additional main peaks.

33. (New) The system according to claim 32 where the energy measure algorithm defines the main peak at the position of the pitch prediction contribution including the highest energy.

34. (New) The method according to claim 17 further including selecting the position of the first pulse at a third position on a first track if the signal is approximately periodic or at a fourth position on the first track if the signal is approximately non-periodic.